COMHELTACWINGPACINST 3570.5
N4
5 Jun 2001

COMHELTACWINGPAC INSTRUCTION 3570.5

Subj: HELICOPTER AERIAL DOOR GUNNER (HADG)/HELICOPTER AERIAL DOOR GUNNER INSTRUCTOR (HADGI)/ASSISTANT HELICOPTER AERIAL DOOR GUNNER INSTRUCTOR (AHADGI) TRAINING AND DESIGNATION

Ref: (a) OPNAVINST C3501.244
(b) OPNAVINST 3710.7R
(c) OPNAVINST 8000.16
(d) E-050-0011 – CNO Approved H-46 Aircrew Syllabus
(e) NA 11-95-13
(f) NA 01-250HDA-75-17
(g) NA 11-600-13-6-2
(h) NA 11-600-13-6-3
(i) NWP-55-9-ASH
(j) COMNAVAIRPACINST 8023.3F
(k) NAMTRAGRUDET #J-041-0145

Encl: (1) Job Qualification Requirements (JQR) for Helicopter Aerial Door Gunner (XM-218)
(2) Job Qualification Requirements (JQR) for Helicopter Aerial Door Gunner Instructor
(3) Sample Designation ltr for Helicopter Aerial Door Gunner
(4) Sample Designation ltr for Helicopter Aerial Door Gunner Instructor
(5) Approved Training Areas

1. Purpose. To establish policy and standardize training requirements for the designation of Helicopter Aerial Door Gunner Evaluator (HADGE), Helicopter Aerial Door Gunners (HADG) and Helicopter Aerial Door Gunner Instructors (HADGI) within COMHELTACWINGPAC.

2. Cancellation. COMHELTACWINGPACINST 3570.2.

3. Background. References (a) through (k) establish requirements for designation of Helicopter Aircrewmen in aerial door gunnery. Proficiency and effectiveness are a direct result of a proper training program. Training must provide the crewman with realistic, hands on experience to adequately prepare for this mission. A high degree of proficiency must be maintained once initial training has been completed.

4. Aerial Door Gunnery Training. Helicopter aerial door gunnery consists of techniques used to acquire and engage a variety of targets while conducting missions such as Anti-Air Warfare (low, slow flyers), Anti-Surface Warfare (small boats, oil platforms, etc.), and Combat Search and Rescue, as well as others. The aerial door gunnery training program shall emphasize weapons safety, weapons familiarization, weapons qualification, target acquisition and aerial firing qualification.

5. Initial Qualification. The Helicopter Aerial Door Gunnery training program shall be conducted in two phases. Phase I shall be completed prior to commencement of phase II and both phases shall be completed within 60 days. Phase I consist of ground training (with particular emphasis on weapons safety and characteristics). Phase II shall emphasize target acquisition and aerial firing qualification. Completion of enclosure (1) and all training requirements herein shall be considered the minimum training requirements for all personnel who are to be designated as HADG, AHADGI or HADGI. Enclosure (1) shall be maintained and completed.

a. Phase I – initial ground training for weapons qualification shall include instruction in:

(1) Safe handling of the weapon and ammunition.

(2) Weapon characteristics.

(3) Assembly, disassembly and nomenclature.

(4) Operation and function of the weapon.

(5) Malfunctions/stoppages, immediate action and maintenance.

(6) Range estimation, fire control, and fire commands.

b. Phase II – target acquisition and initial aerial firing of the weapon shall include instruction in:

(1) Duties of the HADG.

(2) Weapons safety in the aerial environment.

(3) Aircraft familiarization and orientation (if different from aircraft in which qualified).

(4) Firing techniques and weapon employment.

(5) Aircraft communication procedures (verbal/non-verbal).

(6) Ballistics and weapon characteristics.

(7) Visual search and target acquisition.

(8) Weapon emergency procedures.

(9) Aerial Gunnery qualification.

6. Weapons Qualification Criteria. Although references (a) and (d) through (g) establish no specific criteria for target acquisition and effectiveness, the goal is to provide quick, accurate and effective fire suppression or

deterrence and elimination of a threat. Qualification shall be based upon the HADG's effectiveness at visual search, target acquisition, and weapon employment proficiency.

a. Aerial Gunnery Qualification (reference (d)) Gunnery qualification). A minimum of 500 rounds (XM-218) shall be expended by each crewman during aerial qualification. Aerial gun firing exercises shall be flown against ground or surface targets from the following profiles:

(1) Hovering: Exercise low speed maneuvering and quick stops near a designated target.

(2) Orbiting: Exercise 20 degree angle of blank (AOB) turns at various speeds and altitudes above the target consistent with gun installation on the aircraft.

(3) Strafing: Exercise various altitudes, airspeeds and approach angles to the target.

7. Requalification and Currency

a. Designated HADG's are required to maintain currency quarterly from the date of initial qualification per references (e) and (f) for XM-218. Gun-firing flight profiles described in paragraph 4.a. through 4.b.(9) of this instruction shall be used to maintain currency, with a minimum of 100 rounds expended. Should a particular crewman's quarterly currency lapse, requalification shall be accomplished by flying only the aerial qualification portion of this instruction with a qualified HADGI.

b. Phase I of the training shall be repeated:

(1) If aerial gunner qualification has lapsed for six months or more.

(2) Upon change of aircraft type and/or weapon.

8. Helicopter Aerial Door Gunner Instructor (HADGI)/ Assistant Helicopter Aerial Door Gunner Instructor (AHADGI). Squadrons shall identify and request training and evaluation for one Helicopter Aircrewman to fulfill the requirement of squadron level HADGI's. The squadron level instructor(s) shall be responsible for training and qualifying all remaining aerial door gunners.

(1) Prerequisites for command designation as a HADGI are: Completion of a CNO approved Helicopter Aerial Gunnery training syllabus, reference (e) as applicable.

(2) Completion of enclosures (1) or (2).

(3) Command designation as Crew Chief.

(4) Completion of a HADGI Evaluation by an HC-3 (XM-218) Aerial Door Gunnery Evaluator after completion of items listed in (1) through (3) above.

(5) Completion of a AHADGI Evaluation by a designated HADGI after completion of items listed in (1) through (3) listed above.

(6) HADG/I/E currency requirements. In addition to maintaining quarterly currency as outlined in paragraph 6.a., HADGI's are required to teach a minimum of 2 aerial gunnery courses per year and be recertified annually by a designated aerial gunnery evaluator. Should a HADGI's quarterly currency lapse, he or she shall be required to fly only the aerial qualification portion of this instruction with another qualified and current squadron HADGI. Upon completion, the HADGI shall be considered qualified to conduct squadron level training.

9. Targets. Targets of opportunity can come in many shapes and sizes. However, for consistency, the use of MD-58 Marine Location Markers (MLM's) are recommended for over water qualifications. Using the same target will provide the HADGI with the ability to provide consistent, objective criteria for acquisitions and effectiveness.

a. Open Ocean Targets: Target area clearance is paramount. An area five miles around the target shall be swept to ensure it is clear of obstructions and shipping.

b. Marine Life: Marine animals, birds and fish shall never be utilized as targets as stated in squadron tactics manual.

10. Maintenance Requirements. In order to ensure the proper material condition of allotted machine guns, references (c) and (f) through (g) shall be strictly complied with for maintenance and cleaning procedures. The following procedures apply:

a. Aircrews shall inspect the XM-218 prior to each use or firing per reference (f)).

b. The XM-218 shall be cleaned, lubricated and inspected per reference (g). They shall be cleaned, lubricated and inspected on a 28 day cycle per reference (h).

c. Aircrewman and/or qualified maintenance personnel (graduate of reference (d)), shall clean and inspect the weapons after firing or upon completion of the last flight of the day per reference (f) for the XM-218.

d. Any discrepancies noted during use or inspection of the weapons shall be documented in accordance with reference (c).

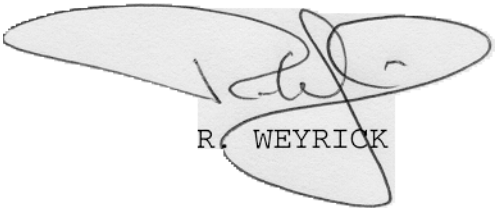
11. Ordnance Certification. All designated HADG/I/E's shall be ordnance certified in accordance with reference (j). A copy of the completed ordnance certification form (enclosures (4) and (5) of reference (j)) shall be entered into the individual's NATOPS training jacket under Mission Qualifications (section II, part B).

12. Designation

a. Upon successful completion of requirements set forth in this instruction, each Aircrewman shall be designated Helicopter Aerial Door Gunner and/or Helicopter Aerial Door Gunner Instructor in writing by the squadron's Commanding Officer using enclosures (3) and/or (4), respectively. A copy of the designation letter shall be entered into the member's Field Service Record and NATOPS training jacket under Mission Qualifications (section II part B).

b. Commanding Officers will ensure that only designated aerial door gunners and authorized crewman under instruction are allowed to fire weapons from the aircraft.

13. Flight briefs. Aircraft Commanders shall ensure a crew brief on voice procedures, lost ICS procedures and weapon control status is conducted in accordance with reference (i).



Distribution:
List I and II

COMMANDER HELICOPTER TACTICAL WING
U. S. PACIFIC FLEET

COMHELTACWINGPACINST 3570.5

JOB QUALIFICATION REQUIREMENTS (JQR) FOR XM-218 HELICOPTER AERIAL DOOR GUNNER

NAME (RANK/RATE) _____

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FINAL QUALIFICATION AS
HELICOPTER AERIAL DOOR GUNNER

NAME _____ RANK/RATE _____

This page is to be used as a record of satisfactory completion of designation sections of the Job Qualification Requirement (JQR). Only specific supervisors may signify completion of applicable sections either by written or oral examinations, or by observation of performance. The examination, need not cover every item, however a sufficient number should be covered to demonstrate the examinees knowledge.

This qualification is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

QUALIFICATION

Having observed satisfactory performance, it is recommended that the trainee be designated a qualified Helicopter Aerial Door Gunner.

RECOMMENDED _____ DATE _____
(LCPO)

RECOMMENDED _____ DATE _____
(AIRCREW DIVISION OFFICER)

RECOMMENDED _____ DATE _____
(OPERATIONS OFFCIER)

APPROVED _____ DATE _____
(COMMANDING OFFICER)

SERVICE RECORD ENTRY _____ DATE _____
(PERSONNEL OFFICER)

NATOPS JACKET ENTRY _____ DATE _____
(NATOPS OFFICER)

100 XM-218 WEAPONS FUNDAMENTALS

References:

a. NAVAIR-11-95-13
b. NAVEDTRA 10185, Gunners Mate 3 & 2
c. NAVAIR 01-250HD-75-17
d. NWP 55-5-ASH, Vol.1 Chap. 3, Defense Armament
e. NAVEDTRA 43217-8B

101 NORMAL PROCEDURES

101.1 Discuss safe handling procedures for the weapon and ammunition. (References (a) through (e))

101.2 Describe the 50 CAL. XM-218 machine gun operating system. (References (a) through (e))

101.3 Describe the loading/unloading of the weapon. (References (a) through (e))

101.4 Describe the weapon mounting system. (References (a) through (e))

101.5 Discuss the weapon pre-fire inspection, cleaning, and post-fire inspection procedures. (Reference (a))

102 WEAPON CAPABILITIES/CHARACTERISTICS

102.1 State the following XM-218 Machine Gun capabilities/characteristics: (Reference (a))

Weight

a. Maximum range
b. Effective range
c. Types of fire
d. Rates of fire
e. Muzzle velocity
f. Types of mounts
g. Weapon delivery patterns
h. Ammunition types Direction of ammunition feed
i. Weapon safeties

103 WEAPON MALFUNCTIONS

103.1 For the discrepancies list below state: (Reference (a) through (e)

a. What indicator is received?
b. What corrective action/steps must be taken?
c. What are the responsibilities of all other crewman during this condition?
d. What protection is provided for this condition?
e. What operating limitations are imposed?
f. What safety precautions must be observed?
    1. Cyclic rate of fire too slow
    2. Cyclic rate of fire too fast
    3. Ruptured round in chamber
    4. Rounds will not feed properly
    5. Linking chute misaligned
    6. Hot barrel
    7. Butterfly trigger will not depress
    8. Single shot only
    9. Ammunition in can all tracers
    10. Broken gun pivot stops

103.2 For the following malfunctions identify probable cause and corrective actin required to eliminate the malfunction. (References (a) through (d))

a. Failure to feed
b. ailure to chamber
c. Failure to fire
d. Failure to unlock
e. Failure to extract
f. Failure to eject
g. Failure to cock
h. Uncontrolled fire
i. Fires only one time
j. Sluggish operation
k. Jammed weapon

103.3 For the emergency conditions listed below state: (Reference (a) through (e))

a. What indication is received?
b. What corrective action/steps must be taken?
c. What are the responsibilities of all other crewman during this condition?

d. What protection is provided for this condition?
e. What operating limitations are imposed?
f. What safety precautions must be observed?
    1. Gun pivot stops installed backwards
    2. Hangfire
    3. Misfire
    4. Weapon removed but not cleared
    5. Overheated barrel
    6. Ricochets
    7. Butterfly will not release (runaway weapon)

200 WEAPONS SYSTEM

a. NAVAIR-11-95-13
b. NAVEDTRA 10185, Gunners Mate 3 & 2
c. NAVAIR 01-25HD-75-17
d. NWP 55-5-ASH, VOL 1 CAHP. 3, DEFENSE ARMAMENT
e. NAVEDTRA 43217-8B

201 FUNCTION

201.2 What is the function of this weapon system?

202 SYSTEM COMPONENTS AND COMPONENT PARTS

Referring to a standard print of the system or the actual equipment, identify the following system components and component parts and discuss the function of each:

202.1 Spade grip back plate assembly

a. Back plate
b. Grip handle
c. Trigger safety
d. Trigger
e. Back plate latch lock
f. Solid plain discs
g. Buffer plate

202.2 Rod Assembly

a. Spring assembly
b. Helical compression spring
c. Rod driving spring

202.3 Breech Bolt Assembly

a. Small arms cartridge extractor
b. Bolt switch
c. Cocking lever pin
d. Cocking lever
e. Accelerator stop
f. Accelerator stop lock
g. Sear slide
h. Sear
i. Sear helical compression spring
j. Firing pin
k. Firing pin extension assembly
    1. Firing pin extension
    2. Straight headless pin
    3. Helical compression spring

202.4 Recoil Buffer Assembly

a. Buffer spring guide assembly
b. Helical compression spring
c. Oil buffer assembly
    1. Oil buffer piston rod assembly
    2. Oil buffer tube
    3. Oil buffer filler screw
d. Oil buffer tube lock assembly
e. Buffer body lock
f. Oil buffer accelerator
g. Accelerator pin assembly
h. Oil buffer body depressor
    1. Breech lock depressor
    2. Oil buffer body

202.5 Barrel and Barrel Extension Assembly

a. Barrel assembly
b. Barrel locking spring
c. Barrel extension assembly
d. Breech lock

202.6 Cover Assembly

a. Lock pin
b. Belt feed lever
c. Belt feed lever plunger

d. Helical compression spring
e. Belt feed slid e assembly
f. Belt feed pawl pin assembly
    1. Belt feed pawl pin
    2. Spring
g. Pawl
h. Belt feed pawl arm
i. Cover latch
j. Cover Extractor pin

202.7 Retracting Slide Assembly

a. Retracting slide lever
b. Handle assembly
c. Retracting slide
d. Headless shoulder pin

202.8 Receiver Assembly

a. Breech lock assembly
b. Cartridge stop assembly
c. Adjustable trigger bar stop assembly
d. Plain knurled nut
e. Trigger bar adjustable spring stop nut
f. Barrel jacket assembly
    1. Front barrel bearing
    2. Recoil booster screw
    3. Barrel jacket assembly
g. Turning block assembly
h. Bolt latch bracket
i. Top plate bracket assembly
j. Right and left hand slide plate assembly
k. Top plate
l. Rear trigger bar
m. Bottom plate

203 PRINCIPLES OF OPERATION

203.1 How do system components and components parts work together to achieve the system’s function?

203.2 What is the sequence of component involvement to initiate/accomplish:

a. The cycle of firing
    1. Recoil

2. Extracting
3. Cocking
4. Counter recoil
5. Feeding
6. Chambering
7. Ejecting
8. Automatic firing of subsequent rounds

203.3 What indications will you receive if the weapon is malfunctioning?

204 PARAMETERS/OPERATION LIMITS

a. Rates of fire
b. Aircraft fields of fire

205 SYSTEM INTERFACE

205.2 How does the weapon system interface with the following?

a. Helicopter gun mounts
b. Aircraft Special Operations (SPEC OPS) configurations

206 SAFETY PRECAUTIONS

206.2 What safety precautions must be observed when operating the weapon system?

206.3 What safety precaution must be observed and corrective actions taken during the following system malfunctions?

a. Cartridge cook-off in weapon
b. Ruptured cartridge case
c. Ruptured weapon barrel

300 AIRCREW EVOLUTION AERIAL FIRING

Prerequisite: Be aircrew assigned by proper authority under DIFCREW orders

300.1 Schools: XM-218 Helicopter Aerial Gunnery training school

300.1.1 Fundamentals from this JQR:

Completed _____
(Qualifier/Date)

300.1.2 Systems from this JQR:

Completed _____
(Qualifier/Date)

300.2.1 Normal procedures

For normal procedures listed below:

a. What are the steps for this procedure?
b. Explain the reasons for this step.
c. What safety precautions must be met?
d. What assistance is required?
e. What communications must be established?

300.2.2 Operating procedures for the XM-218 machine gun

_____
(Signature) (Date)

300.2.3 Safety procedures

_____
(Signature) (Date)

.3 Crewman duties

_____
(Signature) (Date)

.4 Install gun mount box beams

_____
(Signature) (Date)

.5 Install weapon (port and starboard)

_____
(Signature) (Date)

.6 Inventory/install armament accessories

_____
(Signature) (Date)

.7 Weapon pre-fire inspection

_____

(Signature) (Date)

.8 Field of fire

_____

(Signature) (Date)

.9 Aircrew voice procedures

_____

(Signature) (Date)

.10 Open/ventilate/inspect ammunition

_____

(Signature) (Date)

.11 Weapon loading and unloading

_____

(Signature) (Date)

.12 Use of go/no go gauges

_____

(Signature) (Date)

.13 Weapon – aerial fire

_____

(Signature) (Date)

.14 Safe and clear weapon

_____

(Signature) (Date)

.15 Weapon post-fire inspection

_____

(Signature) (Date)

.16 Off load armament

_____

(Signature) (Date)

.17 Weapon cleaning

_____

(Signature) (Date)

300.3 Discrepancies:

AIRCREW EVALUATION GRADE SHEET

300 AIRCREW EVOLUTION INITIAL AERIAL FIRING

DATE PREREQUISITES COMPLETED _____

GRADES: Q = QUALIFIED
U = UNQUALIFIED

COMMENTS: (GRADE OF U REQURIES COMMENT)

OVERALL EVALUATION: Qualified / Unqualified
(CIRCLE ONE)

INSTRUCTOR: _____ DATE: _____

TASK (PERFORM OR SIMULATE)	GRADE
.1 Range safety procedures	Q / U
.2 Crew brief	Q / U
.3 Determine required mission equipment	Q / U
.4 Inspect ammunition	Q / U
.5 Weapon pre-fire inspection	Q / U
.6 Weapon mounting procedure	Q / U
.7 Obtain range clearance	Q / U
.8 Lock and load weapon	Q / U
.9 Proper communication procedures	Q / U
.10 Fire weapon (500 rounds minimum)	Q / U
.11 Hovering fire	Q / U
.12 Orbiting fire	Q / U
.13 Strafing/running fire	Q / U
.14 Target acquisition and proper weapon firing techniques	Q / U
.15 Trouble shooting procedures	Q / U
.16 Emergency procedures	Q / U
.17 Safe and clear weapon	Q / U
.18 Dispose of spent casing and links	Q / U
.19 Police aircraft for FOD	Q / U
.20 Secure unexpended rounds	Q / U
.21 Weapon post-fire inspection	Q / U
.22 Clean weapon	Q / U

XM-218 HELICOPTER AERIAL DOOR GUNNER
QUALIFICATIN SUMMARY

XM-218 Familiarization Class

Completed _____ DATE _____
(Aerial Gunnery Instructor)

100 Series Weapons Fundamentals

Completed _____ DATE _____
(Aerial Gunnery Instructor)

200 Series Weapons system

Completed _____ DATE _____
(Aerial Gunnery Instructor)

300 Aircrew Evolution No. 1 Aerial Firing

Completed _____ DATE _____
(Aerial Gunnery Instructor)

FINAL QUALIFICATION AS
HELICOPTER AERIAL DOOR GUNNER INSTRUCTOR

NAME _____ RANK/RATE _____

This page is to be used as a record of satisfactory completion of designation sections of the Job Qualification Requirement (JQR). Only specific supervisors may signify completion of applicable sections either by written or oral examinations, or by observation of performance. The examination, need not cover every item, however a sufficient number should be covered to demonstrate the examinees knowledge.

This qualification is to be maintained by the trainee and updated to ensure awareness of remaining tasks.

QUALIFICATION

Having observed satisfactory performance, it is recommended that the trainee be designated a qualified Helicopter Aerial Door Gunner.

RECOMMENDED _____ DATE _____
(LCPO)

RECOMMENDED _____ DATE _____
(AIRCREW DIVISION OFFICER)

RECOMMENDED _____ DATE _____
(OPERATIONS OFFICER)

APPROVED _____ DATE _____
(COMMANDING OFFICER)

SERVICE RECORD ENTRY _____ DATE _____
(PERSONNEL OFFICER)

NATOPS JACKET ENTRY _____ DATE _____
(NATOPS OFFICER)

1200
Code

From: Commanding Officer, Helicopter Combat Support Squadron XX
To: (Rate, Name, USN/USNR, SSN)

Subj: DESIGNATION AS HELICOPTER AERIAL DOOR GUNNER

Ref: (a) COMHELTACWINGPACINST 3570.5

1. Having satisfactorily completed the requirements of reference (a), you are hereby designated as Helicopter Aerial Door Gunner in the (type aircraft).

2. Your designation as a Helicopter Aerial Door Gunner is effective (date).

(Signature)_____

Copy to:
Service Record
NATOPS Jacket

1200
Code

From: Commanding Officer, Helicopter Combat Support Squadron XX
To: (Rate, Name, USN/USNR, SSN)

Subj: DESIGNATION AS HELICOPTER AERIAL DOOR GUNNER INSTRUCTOR/ASSISTANT HELICOPTER AERIAL DOOR GUNNER/HELICOPTER AERIAL DOOR GUNNER EVALUATOR

Ref: (a) COMHELTACWINGPACINST 3570.5

1. Having satisfactorily completed the requirements of reference (a), you are hereby designated a Helicopter Aerial Door Gunner Instructor in the (type aircraft).

2. Your designation as a Helicopter Aerial Door Gunner instructor is effective (date).

(Signature)_____

Copy to:
Service Record
NATOPS Jacket

APPROVED HADG/HADGI TRAINING AREAS

1. Several areas are available and highly recommended to optimize HADG/HADGI initial qualification training effectiveness.

a. Quick Draw area in Fleet Hot

(1) Location: Area 2734 Western half. Lat / Long: N 32.35, W 117.40.00. Area is 4 NM across (East/West) and 10 NM across (North/South).

(2) Operational hours: Monday 1200 to Friday 1200.

(3) Controlling Facilities: FACSFAC. (619) 545-1756/6536. Schedule 2 hours in advance, and request the Quick Draw operations area.

(4) Targets: You provide your own Mk 25/58 Marine Location Markers.

(5) Communications: Check in with Beaver Control at 20 NM, Freq. 289.9.

b. Moving Sand, MCAS Yuma

(1) Location: R-2301 W (low), TACAN Ch. 84, Bearing 117 deg./19 DME. Lat/Long: N32.26.16/W 114.19.52. Range elevation 572’.

(2) Operational hours: Monday through Friday 0600-2230 Mountain Standard Time.

(a) Yuma Range Control (YRC) – (DSN) 951-2214/5, (FAX) 951-2964, (602) 341-2964. Schedule range time with YRC is 30 days in advance by phoncon and FAX.

(b) Weapons Impact Scoring Set (WISS) – (DSN) 951-2466, (FAX) 951-3204, (602) 341-3204. Provides range safety briefs and scoring. Requires a confirmation call 48 hours prior to range events for coordination. Located near the visiting aircraft line in Bldg 136.

(3) Targets

(a) Sonic Target: Description 2 separate sand burns covered by acoustic (sonic) sensors which record/score hits on the target and provide immediate feedback.